Province of the
EASTERN CAPE
EDUCATION

EXAMINATIONS AND ASSESSMENT CHIEF DIRECTORATE
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REPUBLIC OF SOUTH AFRICA, Website: www.ecdoe.gov.za

2022 NSC CHIEF MARKER'S REPORT

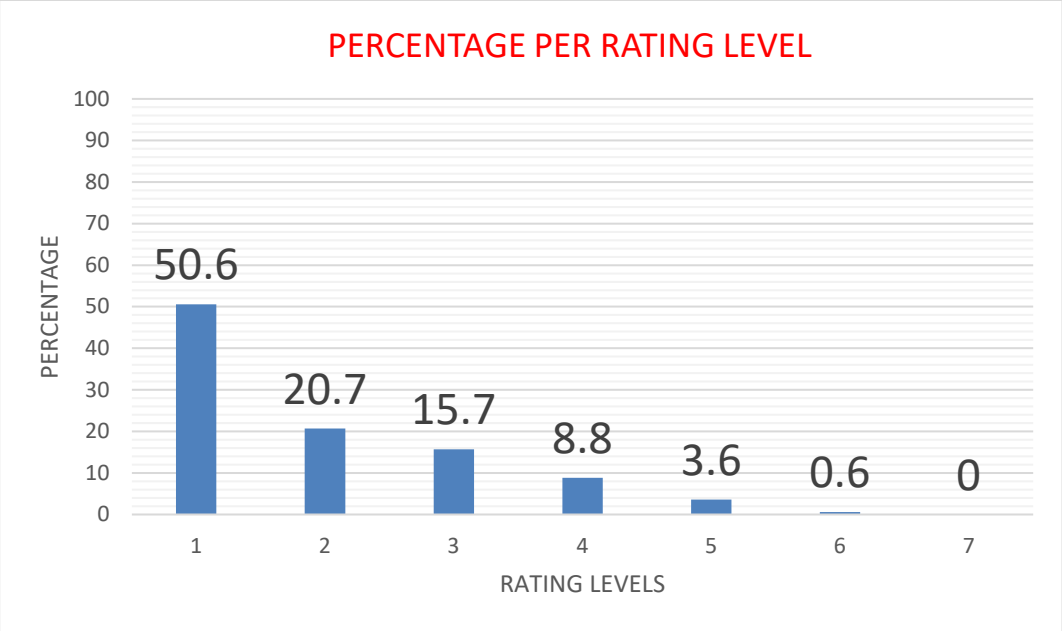
SUBJECT	**COMPUTER APPLICATIONS TECHNOLOGY**
PAPER	**2**
DURATION OF PAPER:	**3 HOURS**
PROVINCE	**EASTERN CAPE**
DATES OF MARKING	**8 DECEMBER TO 22 DECEMBER 2022**

SECTION 1: (General overview of Learner Performance in the question paper as a whole)

The 2022 Computer Application Technology Paper 2 attempted to offer something from across the CAT syllabi from Grade 10 to Grade 12 with more emphasize on Grade 10 and 11 content. This is a huge problem because majority of the learners STILL do not keep their Grade 10 and Grade 11 learning material. The question paper was based on knowledge and required intensive studying for the paper.
Many candidates still lack the skills and knowledge required to answer even the easy questions. Students from more affluent, technology inclined households would have had an advantage but not the rest. Application of knowledge still remains a major problem. Learners do not read the questions thoroughly before answering them. The practical questions were much more applicable to what the learners had to do in their practical examination and this helped them a lot in answering these questions. Some learners were also not provided with the latest exam guidelines or teachers did not teach the exam guidelines and one could see this in the learner's answers.
In some instances, the paper also required a lot of experience and exposure to the Computer World as well as a lot of application. The content is sometimes being embedded in real life scenarios and therefore some of the students struggle to identify with it.
Many educators as well as candidates rated the paper as being fair and appropriate, but not easy. It is generally accepted that CAT has evolved into a more analytical and technical subject and success in the subject is dependent on hard work, thorough preparation and dedication.

Once again, a large percentage of the learners in the Eastern Cape failed to achieve 40%. <u>This year most of the learners failed to achieve even 30%</u>. This is extremely worrying. They have as usual achieved much lower marks in Paper 2 than in Paper 1. This is clearly an indication of the level of preparation and commitment to the task. It is often claimed that the diverse socio-economic background and the availability of resources play a significant role in the NSC results. It is time that individuals take responsibility for their success by going the extra mile.

The graph below shows the overall performance of the learners in the Eastern Cape.



As can be seen from the tables, 49,4 of learners in the Eastern Cape passed the examination (2022) compared to 47.4% last year (2021) and 61.3% in (2020) and 58.1% in (2019) and 60.9% in (2018).

2018		
Total wrote		**3537**
% Passed		60.9
Levels	Total	Percent
1	1384	39
2	898	25.4
3	642	18.2
4	404	11.4
5	169	4.8
6	38	1.1
7	2	0.1
	3537	**100**

2019		
Total wrote		**3519**
% Passed		58.1
Levels	Total	Percent
1	1473	41.9
2	846	24.0
3	603	17.1
4	372	10.6
5	159	4.5
6	52	1.5
7	14	0.4
	3519	**100**

2020		
Total Wrote		3772
% Passed		61.3
Levels	Total	Percent
1	1461	38.7
2	892	23.6
3	756	20.0
4	414	11.0
5	197	5.2
6	36	1.0
7	16	0.4
	3772	100.0

2021		
Total Wrote		4476
% Passed		47,4
Levels	Total	Percent
1	2355	52,6
2	909	20,3
3	667	14,9
4	383	8,6
5	126	2,8
6	28	0,6
7	8	0,2
		100,0

2022		
Total Wrote		4676
% Passed		49,4
Levels	Total	Percent
1	2365	50,6
2	967	20,7
3	735	15,7
4	413	8,8
5	167	3,6
6	27	0,6
7	2	0,0
		100,0

This year 49,4 % passed the exam.

All the other graphs in this report were created from data attained by entering the results of 100 random sample scripts. Please note that this does not reflect the most accurate picture as it is very difficult to extract a sample of 100 scripts which would be 100% representative of the performance of the Eastern Cape.

More learners completed the question paper this year and not many questions were left undone. There are still too many learners that lack the skills and knowledge required to answer even the easy questions.

More textbook content must be included in the theory question paper. These may be higher level questions. Some questions come over as being too technical for CAT.

Therefore, markers also need to be trained to be more divergent in their thinking and award marks to comments that go beyond the marking guideline.

It will also be to the advantage of the learners if they can receive both the English and Afrikaans versions of the paper.

As mentioned earlier, learners are still performing better in the practical paper than in the theory paper.

- The obvious reason for this is the language barrier of candidates. Learners do not always understand and interpret the questions correctly and if they do, they do not have the vocabulary to express themselves correctly. This results in responses from learners that is very difficult to read and to understand. Although everything in our power is done to accommodate the language barrier of learners and even that of many teachers who teach in their second language, there is only so much that can be done. Teachers and learners should do everything in their power to improve their English language.
- Teachers do not spend enough teaching time on preparing learners for the theory paper and that learners do not study for CAT theory. Teachers and learners must realize that theory is just as an important component in the CAT syllabus and that it contributes the same weight in the overall mark for CAT.

Because the suggestions for improving teaching and learning (Section C) as well as the useful comments to teachers (Section E) are very much the same for all the different questions, I will discuss them generally at the beginning of the report and then just refer to it in the discussion of the different questions.

GENERAL COMMENTS ON IMPROVING THE TEACHING AND LEARNING OF CAT THEORY

- **More time and effort should be spent on teaching theory by following the instructions in the CAPS document as well as the exam guideline.** Teachers should explain the theory and make sure that learners understand what they are learning. Teachers should teach theory in a practical way. Bring examples of technology and demonstrate how it works. **Research should be done on new concepts and new technology evolving**. New concepts that are additions to the previous Examination Guidelines were only distributed to schools on 28 July 2022.
- **CAT is a very dynamic subject**. Teachers must therefore make a concerted effort to keep up with this new technology and bring their learners into contact with new technologies on a regular basis. Teachers will be informed once a year on new technology that may be assessed in addition to the existing content of the CAPS syllabus. This will be added to the examination guideline document which will be released once a year. All new technologies should be made available as early as January. This was done on 28 July this year, not enough time to teach and memorize it.
- **Learners can also be challenged to come and share new technologies** which they came across in class. This can also be done as part of a homework or class activity. Encourage learners to browse for new technology on the Internet or find advertisements in local media. They can bring these to school where they can be discussed in class. Teachers can also make use of experts in the field of technology to come and explain and demonstrate some of the latest technologies to learners.

- **Teachers are advised to consult more than one textbook when teaching theory as well as to make sure that they know the content of the CAPS document and what is required from CAPS.** There are three approved textbooks available for CAT. Books approach topics from different angles and can even have additional information on topics. It can only be to learner's advantage to consult more than one textbook.
- **Learners should also be given regular theory tests** – based on the format of examination papers. The results of these tests (learner's responses) should be discussed with them – not just be handed back. They should know why they lost marks.
- Although time is limited, teachers should try and **work through some question papers of previous years**. The memos of these papers should be discussed with learners to train them how to approach and answer a question paper as well as learning the content.
- Teachers should **teach learners to use the correct terminology and teach learners to write in full sentences** when answering questions. They should not be allowed to answer questions by using words such as *it, things, they … etc.* Learners also do not read the instructions: the instructions clearly stated that answers such as 'cheaper', 'slower'/'faster', etc. will NOT be marked.
- **Teachers should explain the meaning of the following terminology/ concepts used in questioning: user friendly interface, word processing/database options/features, most suitable application, technologies, software settings, measures, criteria to consider, difference between examples and uses, difference between media and medium, network and internet (do not need a network to have internet and if you have internet it does not mean you have a network), give specific examples of….**
- **Grade 10 and 11 content**: Teachers are reminded that according to the CAPS syllabus, learners are assessed on all theory done from grade 10 – 12 in the final examination. Learners should therefore keep summaries of their gr 10 and 11 theory in notebooks. Throughout the grade 12 year, teachers should incorporate grade 10 and 11 knowledge in tests to prepare learners for the final examination.

NOTE TO SUBJECT ADVISORS:

- CAT is still a new and very dynamic subject. Many teachers do not have the training or support to continually provide quality education to learners. Subject advisors should play a more active role in assisting teachers in gaining the needed knowledge and expertise. Subject advisors should also make sure that all schools receive the new and updated examination guidelines as well as new terminology for the New Year and make sure they use these documents in their teaching. Short training courses presented by themselves or other specialist teachers can only benefit this valuable subject.
- There are also schools who do not have the necessary hardware, software and Internet access to offer this subject. We would also appeal to the department and subject advisors to play a supportive role in this regard – especially in schools where there are trained teachers available.

MISTAKES MADE BY LEARNERS IN ANSWERING THE PAPER:

The following mistakes were experienced and we appeal to teachers to please discuss this with their learners.

- **Learners giving one-word answers**. It often happens that learners respond with only one word to a question to list advantages/disadvantages/ characteristics. It is impossible for markers to judge from that whether the

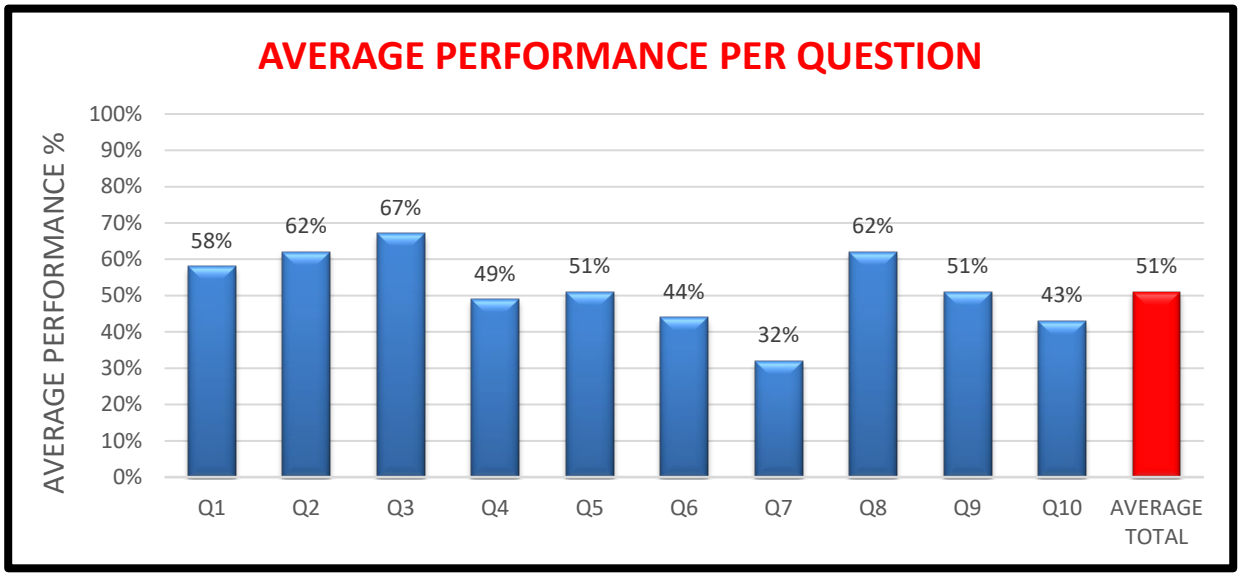
learner knows the work. No marks will be awarded in such cases. Other learners again, write paragraphs instead of sentences – often contradicting their answer. This must also be discouraged.

- **Vague and generic answers**. Some learners, when they do not really know the answer, often fall back on vague and generic answers such as "it is easier and faster" and terms like "things" and "stuff" etc. Answers like these which do not include any motivation, reason or an explanation or the correct terminology which can be used to judge a learner's comprehension will not earn any marks and should be discouraged. This statement is clearly outlined in the instructions and information at the beginning of the question paper (instruction number 10).
- **Learners do not read the questions/scenarios/instructions properly**. They read until they think they know the answers, or they only notice some keywords and then they assume the rest of the question. Learners should be encouraged to read the whole question slowly and with comprehension before attempting to answer it. In many scripts it is clear that learners are losing marks because they do not read the questions properly. A lot of students tend to re-write the question as their answer. This is completely unacceptable. Learners should also be encouraged to read the instructions at the beginning of the question paper.
- **Mark allocation.** Teachers should indicate to learners that the paper is marked on a "one mark per fact" basis. Thus, if a question is indicated to count <u>two</u> marks, they need to write down <u>two</u> facts.
- **Handwriting**. As with all subjects, <u>handwriting</u> is a problem with many candidates where markers have difficulty deciphering the handwriting in order to mark the script.
- **Answering of questions**.
  - Start <u>each</u> new question on a <u>new page</u>.
  - <u>Leave a line open</u> between questions.
  - Answer the questions in the order they appear on the question paper.
  - Keep sub-sections of a question together.
  - Use the numbering system as indicated on the question paper for each question.
  - If learners decide not to attempt a sub-question of a question, they must at least write the number of the question so that markers can clearly see that a question has been left out. It makes it very difficult for markers who mark under a lot of pressure to lose time in an attempt to look for the correct answers.
  - **Some of the learners did not adhere to the instructions in the question paper as stated earlier in this report. According to the instruction's learners are not allowed to just write: "cheaper", "faster", "easier", etc.**

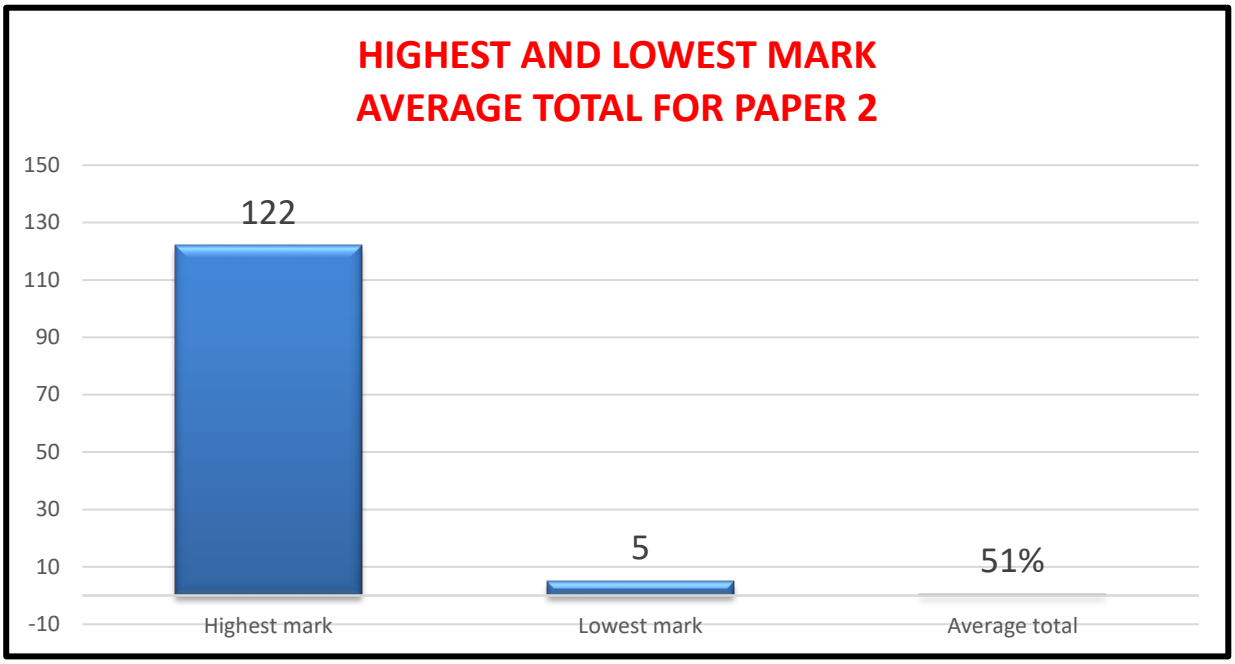
SECTION 2:

NOTE: All the graphs in this section were created from data attained by entering the results of 100 random sample scripts. Please note that this does not reflect the most accurate picture as it is very difficult to extract a sample of 100 scripts which would be 100% representative of the performance of the Eastern Cape.

The following graph shows the average performance in the individual questions taken from the sample of 100 scripts.



The following graph shows the highest and lowest mark as well as the average total for CAT Paper 2 in the Eastern Cape.

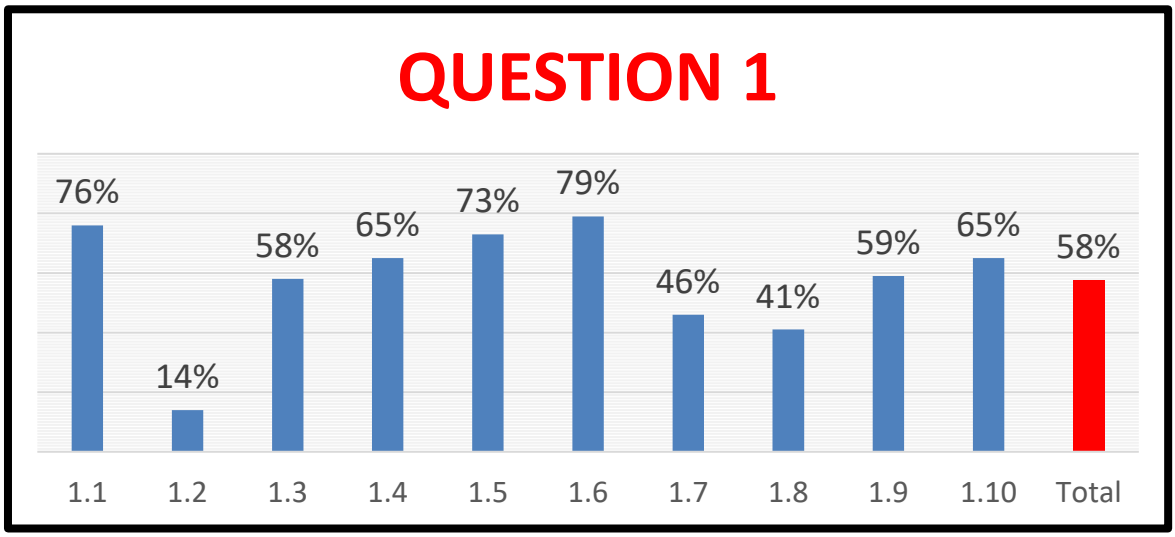


Comment on candidates' performance in <u>individual questions</u>

QUESTION 1

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		5.8/10
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
1.1 – 1.10	MATCHING ITEMS	58%



Question number	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	Total
Question Value	1	1	1	1	1	1	1	1	1	1	10
Maximum	1	1	1	1	1	1	1	1	1	1	10
Minimum	0	0	0	0	0	0	0	0	0	0	1
Average	76%	14 %	58 %	65%	73 %	79 %	46 %	41 %	59 %	65 %	58%
Median	1	0	1	1	1	1	0	0	1	1	6

Distribution of marks	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10
	1	1	1	1	1	1	1	1	1	1
0	24	86	42	35	27	21	53	59	41	35
1	76	14	58	65	73	79	47	41	59	65

The performance of learners in this question was average.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Questions were fair to difficult, with a few more difficult analytical questions (1,5; 1.9; 1.10). Question 1.2 was interpreted differently with some selecting A and some D depending on how they motivated the process of data protection. 1.7 was also difficult for learners.

(c) Provide suggestions for improvement in relation to Teaching and Learning

Learners should be taught to arrive at an answer adopting a process of elimination. Selecting the most probable answers and then removing them one by one.

Also refer to the general comments in Section 1 of this report for more comments and suggestions which could help teacher developments as well as advantage our learners.

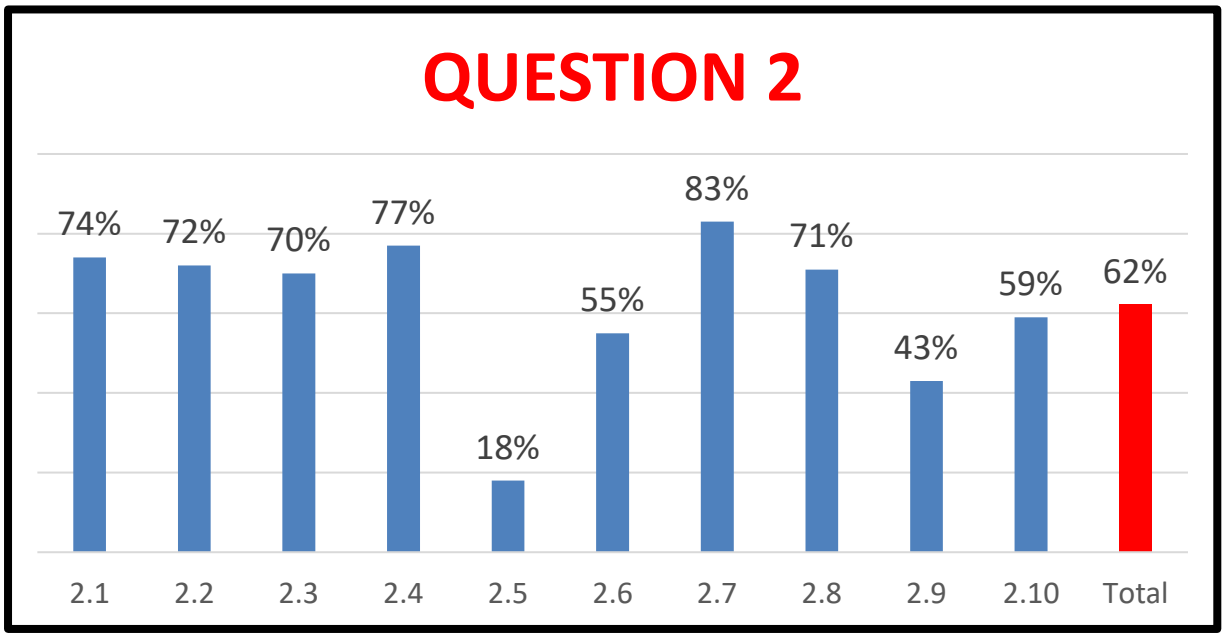
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Many learners continue not to answer some of the questions which is quite surprising, or they tend to write down two options (A/B) as if the marker will choose between the 2 answers. Although this question is not a guessing game, learners should be encouraged to at least try an answer out of the options left. I would like to appeal to teachers to teach their learners to answer this question using the answer sheet provided.

QUESTION 2

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100:		6.2/10
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
2.1 – 2.10	MATCHING ITEMS	62%



Question number	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	Total
Question Value	1	1	1	1	1	1	1	1	1	1	10
Maximum	1	1	1	1	1	1	1	1	1	1	10
Minimum	0	0	0	0	0	0	0	0	0	0	0
Average	**74 %**	**72 %**	**70 %**	**77 %**	**18 %**	**55 %**	**83 %**	**71 %**	**43 %**	**59 %**	**62%**
Median	1	1	1	1	0	1	1	1	0	1	7

Distribution of marks	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10
	1	1	1	1	1	1	1	1	1	1
0	26	28	30	23	81	45	17	29	57	41
1	74	72	70	77	18	55	83	71	43	59

The performance of learners in this question was good. Some of the learners even obtained full marks for this question.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Questions were quite straight forward for those who prepared well for the examination. Question 2.5 was the only question that was answered poorly in comparison with the rest. The reason therefore is that students don't know the term firmware. This is not a new term and teachers should focus on this term.
Question 2.6 was a difficult analytical practical scenario and learners struggled to answer this question.

(c) Provide suggestions for improvement in relation to Teaching and Learning

Learners should be taught to arrive at an answer adopting a process of elimination. Selecting the most probable answers and then removing them one by one.

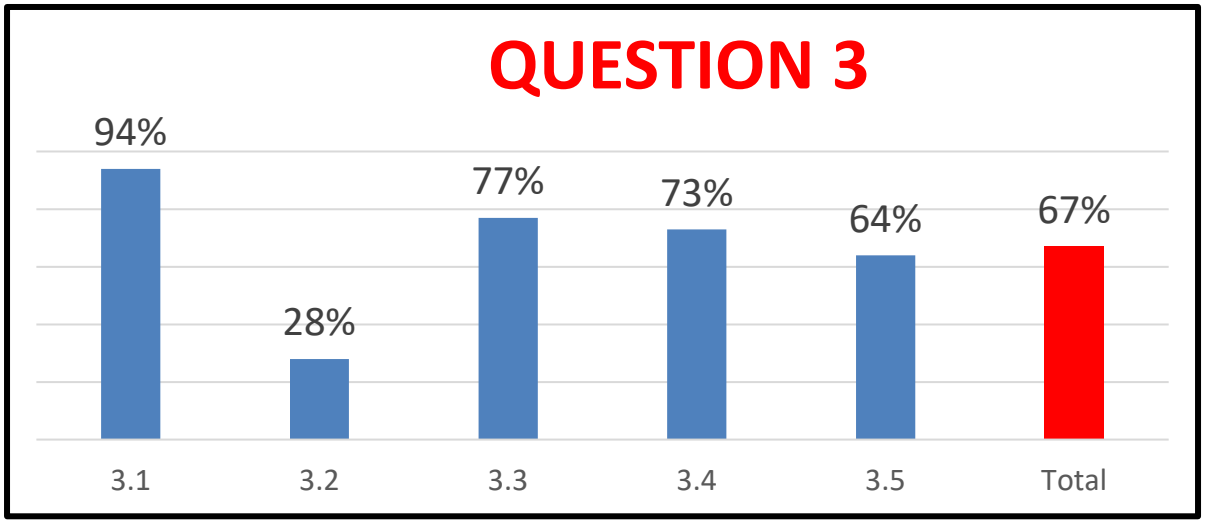
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Many learners continue not to answer some of the questions which is quite surprising, or they tend to write down two options (A/B) as if the marker will choose between the 2 answers. Although this question is not a guessing game, learners should be encouraged to at least try an answer out of the options left. I would like to appeal to teachers to teach their learners to answer this question using the answer sheet provided.

QUESTION 3

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		3.35/5
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
3.1 – 3.5	TRUE/FALSE ITEMS	67%



Question number	3.1	3.2	3.3	3.4	3.5	Total
Question Value	**1**	**1**	**1**	**1**	**1**	**5**
Maximum	1	1	1	1	1	5
Minimum	0	0	0	0	0	0
Average	**94%**	**28%**	**77%**	**73%**	**64%**	**67%**
Median	1	0	1	1	1	4

Distribution of marks	3.1	3.2	3.3	3.4	3.5
	1	**1**	**1**	**1**	**1**
0	5	72	23	27	36
1	94	28	77	73	64

The performance of learners in this question varied from average to poor.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Learners still battled with this question this year.

Learners are still not used to a question of this format where they had to identify whether a statement is true or false AND then make the false statements true by changing the underlined concept/term.

The question was thus misunderstood by many learners. Some of the learners changed the statement to make the underlined word true instead of changing the word to make the statement on the question paper true. Some learners only write false without the correct word next to it.

I believe that with some input by teachers, the learners can do much better in this question in the future.

Question 3.2 was poorly answered by most learners – learners don't learn Grade 10 and 11 work (e-waste).

(c) Provide suggestions for improvement in relation to Teaching and Learning

Teachers should train the learners to answer question of this format by explaining to them how to attempt a question of this nature. They should then also expose learners to questions of this type in class tests and examination during the year. Practice from old question papers as well.

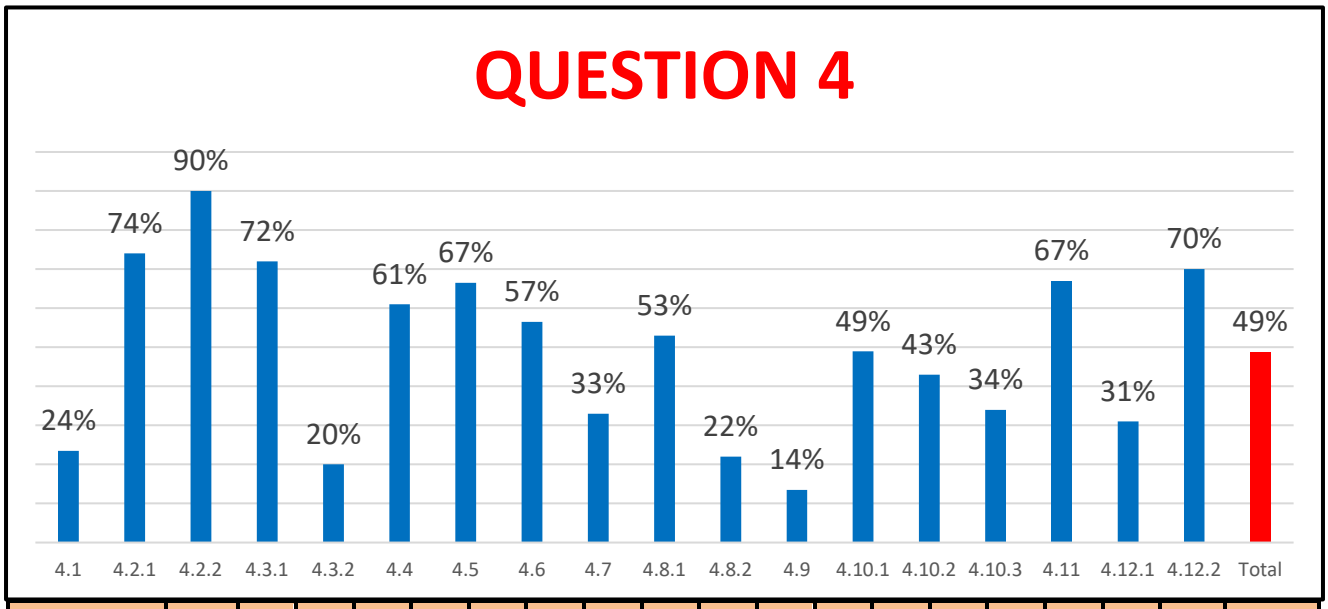
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

This type of question might seem very easy, but to successfully answer a question of this format, learners should be taught to read the statements a few times with concentration and understanding.
Teachers should pay attention to this during the year. This is something that learners should be taught and exposed to.

QUESTION 4

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :	12.25/25	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
4.1 – 4.12	SYSTEMS TECHNOLOGIES	49%



Question number	4.1	4.2.1	4.2.2	4.3.1	4.3.2	4.4	4.5	4.6	4.7	4.8.1	4.8.2	4.9	4.10.1	4.10.2	4.10.3	4.11	4.12.1	4.12.2	Total
Question Value	2	1	1	1	1	1	2	2	2	1	1	2	1	1	2	2	1	1	25
Maximum	2	1	1	2	1	2	2	2	2	1	1	2	2	1	2	2	2	1	23
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	**24 %**	**74 %**	**90 %**	**72 %**	**20 %**	**61 %**	**67 %**	**57 %**	**33 %**	**53 %**	**22 %**	**14 %**	**49 %**	**43 %**	**34 %**	**67 %**	**31 %**	**70 %**	**49%**
Median	0	1	1	1	0	1	2	1	1	1	0	0	0	0	1	2	0	1	13

Distribution of marks	4.1	4.2.1	4.2.2	4.3.1	4.3.2	4.4	4.5	4.6	4.7	4.8.1	4.8.2	4.9	4.10.1	4.10.2	4.10.3	4.11	4.12.1	4.12.2
	2	1	1	1	1	1	2	2	2	1	1	2	1	1	2	2	1	1
0	61	26	10	32	80	40	23	17	48	47	78	75	52	57	40	22	70	30
1	31	74	90	64	20	59	21	53	38	53	22	23	47	43	52	22	29	70
2	8	0	0	4	0	1	56	30	14	0	0	2	1	0	8	56	1	0

The learners' response to this question was disappointing, upsetting and not up to standard. Learners found Questions 4, 7 and 10 the most difficult as seen in the graph under Section 2.

In cases where learners performed poorly it is mainly due to:

- Not answering questions in full sentences
- Not motivating their answers where needed
- Not reading the questions properly. They read questions only until they think they know what is requested and often they misinterpret the question.
- Lack of content knowledge.
- Learners seem to read only the first part of the question and assume what the rest of the questions will look like. In other cases, they identify key words in the question and repeat the question as part of their answer.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note and act accordingly:

Q 4.1

Poor response from learners. Learners don't know what an office suite is. This is Grade 10 terminology and most of the learners only obtained 1 mark.

Q 4.3.1 and 4.3.2

Poor response from learners. Learners did not understand what are expected from them.

Most of the learners wrote that you need to uninstall software and then reinstall it again or to install a patch to avoid bugs before distributing the final version of the software. It is as if the learners were never exposed to the term beta software. If a learner could not answer question 4.3.1 correctly, it is most likely that they would struggle with 4.3.2 as well.

The answer for question 4.3.2 is installing a patch and if they wrote this with question 4.3.1 they did not write the same (correct) answer with 4.3.2.

Q 4.4

Poor response from learners. It seems as if learners were not exposed to the term utility.

Q 4.7

Learners struggled with this question. Poor response from learners. Learners were not exposed on how to check the actual size of a hard drive on a Windows PC.

Q 4.9

Learners struggled with this question. This is Grade 11 work they needed to recall.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Teachers should spend more time showing learners how to read a question in its entirety and explain how to break the question up into smaller sections to make it easier to understand. They should also be shown how to identify what the question wants with regards to advantages, disadvantages, reasons, etc.
- It seems as if teachers did not revise Grade 10 and 11 theory.

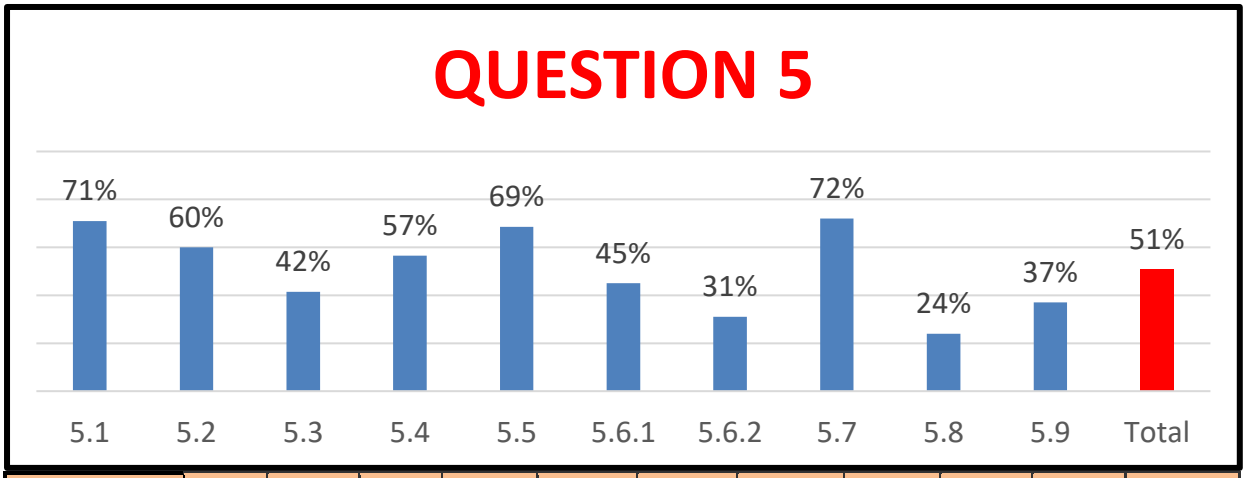
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- As with most other questions learners do not read with comprehension. This might be due to a number of factors such as a language barrier or from skipping sections of the question and only focusing on specific keywords.
- Learners do not understand basic terminology which should have been engrained since Grade 10.
- As mentioned at the start of this report, many learners tend to write very vague answers using words like “this”, “things”, “stuff”, “fast”, “easy”, “they”, “it”, etc. instead of the correct terminology.

QUESTION 5

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :	7.65/15	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
5.1 – 5.9	INTERNET AND NETWORK TECHNOLOGIES	51%



Question number	5.1	5.2	5.3	5.4	5.5	5.6.1	5.6.2	5.7	5.8	5.9	Total
Question Value	**1**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**2**	**1**	**15**
Maximum	1	2	2	2	2	1	1	1	2	1	14
Minimum	0	0	0	0	0	0	0	0	0	0	0
Average	**71 %**	**60 %**	**42 %**	**57%**	**69%**	**45%**	**31%**	**72%**	**24 %**	**37%**	**51%**
Median	1	1	1	1	2	0	0	1	0	0	8

Distribution of marks	5.1	5.2	5.3	5.4	5.5	5.6.1	5.6.2	5.7	5.8	5.9
	1	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**2**	**1**
0	29	22	30	26	13	55	69	28	65	63
1	71	36	57	35	37	45	31	72	22	37
2	0	42	13	39	50	0	0	0	13	0

The performance of learners in this question was average.

In cases where learners performed poorly it is mainly due to:

Lack of content knowledge, using wrong terminology as well as getting confused with some of the terminology.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 5.3

Poor responses from learners. It is clear from their responses that they were not exposed to a bookmarked website.

Q 5.6.1 and 5.6.2

Poor responses from learners. This is very disappointing because this is Grade 10 work and straight forward definitions they needed to recall.

Q 5.8

Very poorly answered. Most of the learners did not understand the term “uses” and therefore they did not know that they were supposed to give proper examples of how you can use IoT devices in a home environment. They only answered this question in general by referring to a TV or a fridge. They were supposed to give specific examples of IoT device usage or devices with a motivation.

(c) Provide suggestions for improvement in relation to Teaching and Learning

Teach basic terminology and put more time and effort into theory.

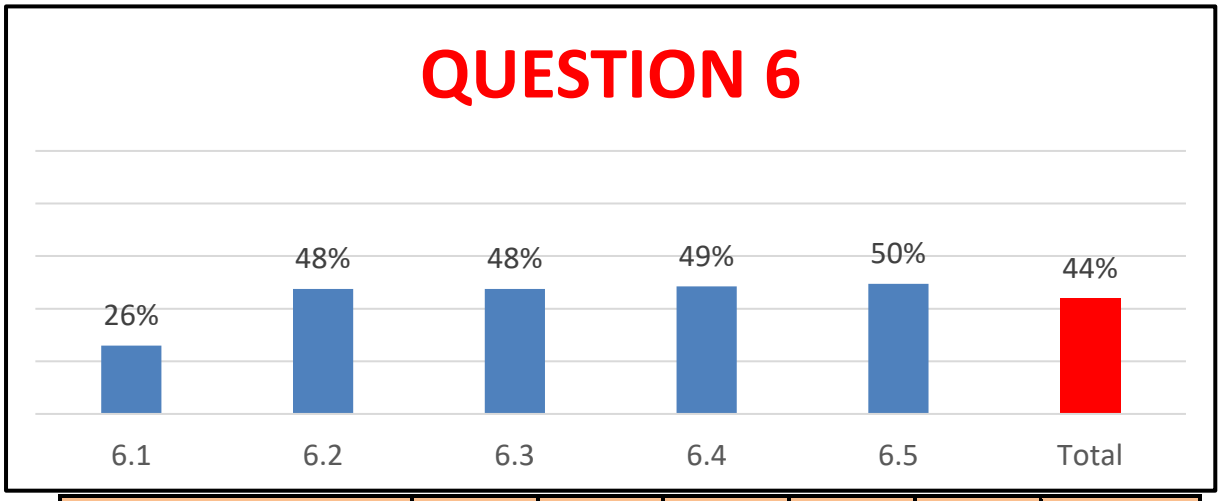
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Learners do not read with comprehension. This might be due to a number of factors such as a language barrier or from skipping sections of the question and only focusing on specific keywords.
- Learners don’t look at mark allocations.
- Learners don’t know how to express themselves. Learners use to much general/vague terms and the memorandum only accepts certain words.

QUESTION 6

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :		4.4/10
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
6.1 – 6.5	INFORMATION MANAGEMENT	44%



Question number	6.1	6.2	6.3	6.4	6.5	Total
Question Value	**2**	**2**	**2**	**2**	**2**	**10**
Maximum	2	2	2	2	2	10
Minimum	0	0	0	0	0	0
Average	**26%**	**48%**	**48%**	**49%**	**50%**	**44%**
Median	0	1	1	1	1	5

Distribution of marks	6.1	6.2	6.3	6.4	6.5
	2	**2**	**2**	**2**	**2**
0	58	34	35	29	40
1	32	37	35	45	21
2	10	29	30	26	39

The performance of learners in this question was very disappointing.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 6.1

Poor response from learners. This question is coming straight from their PAT Task and learners did not know the term focus question and what it is all about.

Q 6.3

Learners don't know the difference between a citation and bibliography.

Q 6.4

Learners did not fully understand this question. Most of the learners only focussed on the second part of the question and therefore did not answer what the question asked.

Learners do not know the advantages of electronic data.

(c) Provide suggestions for improvement in relation to Teaching and Learning

I refer you to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions

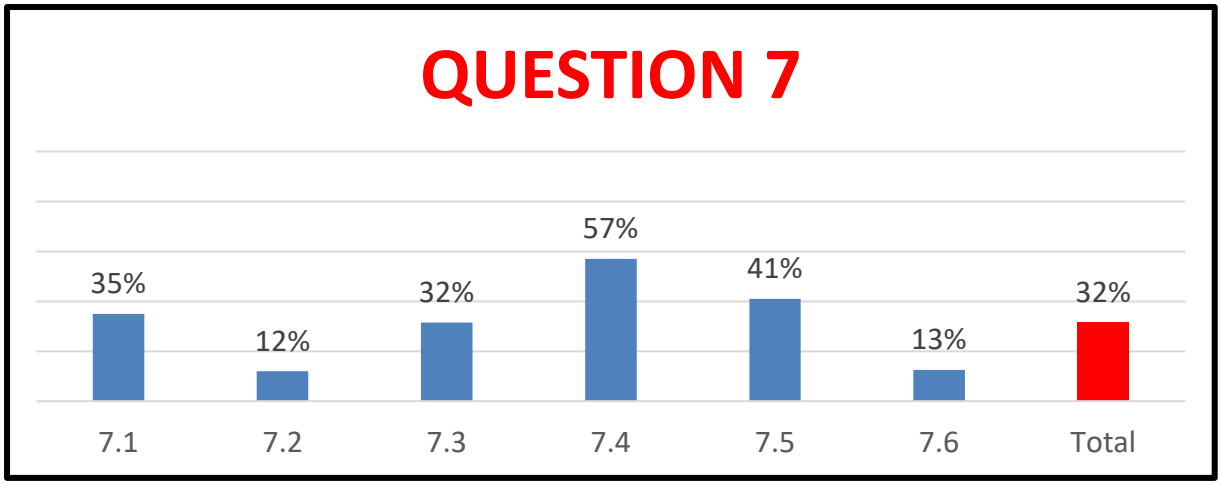
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

I refer you to observations made in the responses of learners in general in this paper. They are basically the same for all questions.

QUESTION 7

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :	3.2/10	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
7.1 – 7.6	SOCIAL IMPLICATIONS	32%



Question number	7.1	7.2	7.3	7.4	7.5	7.6	Total
Question Value	**2**	**1**	**2**	**1**	**2**	**2**	**10**
Maximum	2	1	2	1	2	2	9
Minimum	0	0	0	0	0	0	0
Average	**35%**	**12%**	**32%**	**57%**	**41%**	**13%**	**32%**
Median	1	0	0	1	1	0	3

Distribution of marks	7.1	7.2	7.3	7.4	7.5	7.6
	2	**1**	**2**	**1**	**2**	**2**
0	49	88	57	43	42	79
1	32	12	23	57	34	17

The learners' response to this question was extremely poor.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

The following questions were poorly answered by the majority of learners. Teachers should take note of the following:

Q 7.2

Poor response from learners. Learners do not understand the term “spoofing”.

Q 7.3

Learners do not understand the concept DDoS and why DDoS attacks are harmful.

Q 7.6

Poor responses from learners. This is new technology and it seems as if the learners were not exposed to this concept.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- When questions are differently phrased or structured, learners are unable to tackle those questions.
- The learners don’t read the questions properly before they answer.

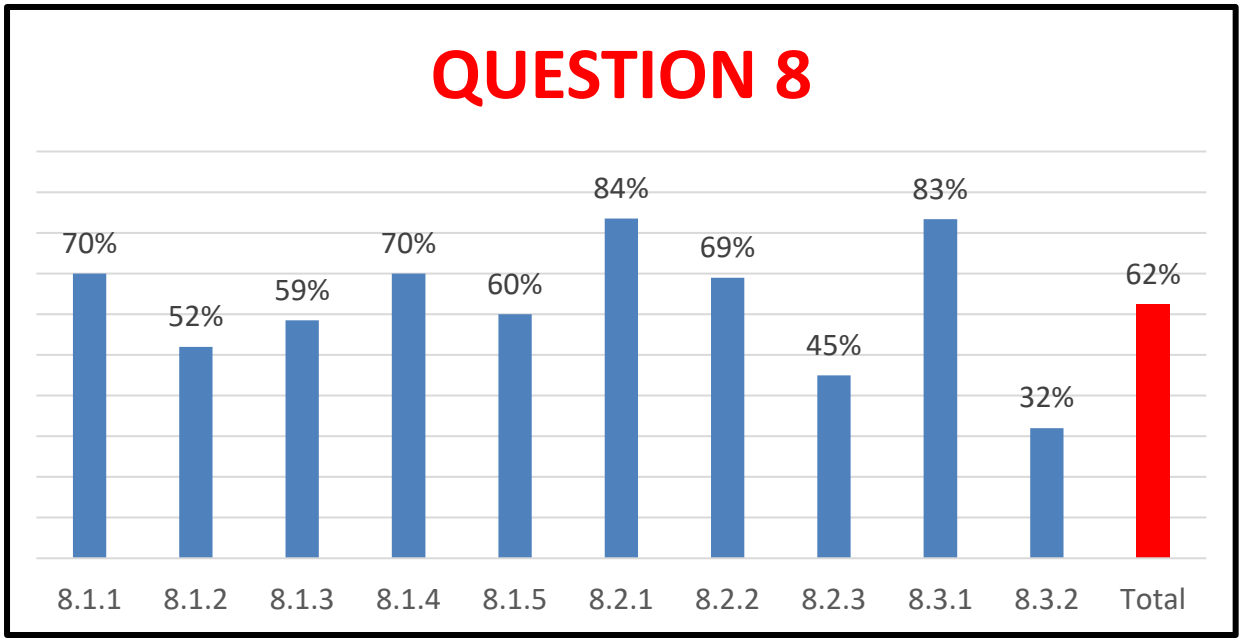
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- The understanding of some questions is still a problem.
- The learners don’t read the questions properly before they answer.

QUESTION 8

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :	9.25/15	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
8.1 – 8.3	SOLUTION DEVELOPMENT	62%



Question number	8.1.1	8.1.2	8.1.3	8.1.4	8.1.5	8.2.1	8.2.2	8.2.3	8.3.1	8.3.2	Total
Question Value	1	1	2	1	1	2	2	1	3	1	15
Maximum	1	2	2	1	2	2	2	1	3	1	15
Minimum	0	0	0	0	0	0	0	0	0	0	0
Average	**70 %**	**52 %**	**59 %**	**70 %**	**60 %**	**84 %**	**69 %**	**45 %**	**83 %**	**32 %**	**62%**
Median	1	1	1	1	1	2	2	0	3	0	11

Distribution of marks	8.1.1	8.1.2	8.1.3	8.1.4	8.1.5	8.2.1	8.2.2	8.2.3	8.3.1	8.3.2	8.1.1
	1	1	2	1	1	2	2	1	3	1	1
0	30	50	29	30	41	7	18	55	10	68	30
1	70	48	25	70	58	19	26	45	0	32	70
2	0	2	46	0	1	74	56	0	20	0	0
3	0	0	0	0	0	0	0	0	70	0	0

The learners' response to this question was very good for a change. These questions were based on practical work. This is a good example of teaching theory together with practical work.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

In cases where learners performed poorly it is mainly due to:

- They don’t know the reasons for using the hyphenation feature in word processing.
- They don’t know the way to insert text into an existing document without using copy and paste method.
- They are not familiar with the ways to view the whole function in Excel.
- The only question the learners really struggled with was question 8.3.2 – advantage of web pages being based on text files.

(c) Provide suggestions for improvement in relation to Teaching and Learning

When teachers do practical, they need to explain the theory or how it works in theory as well.

Explain to the learners why we do certain functions and work in practical as well as the advantages of using certain features in the different programs.

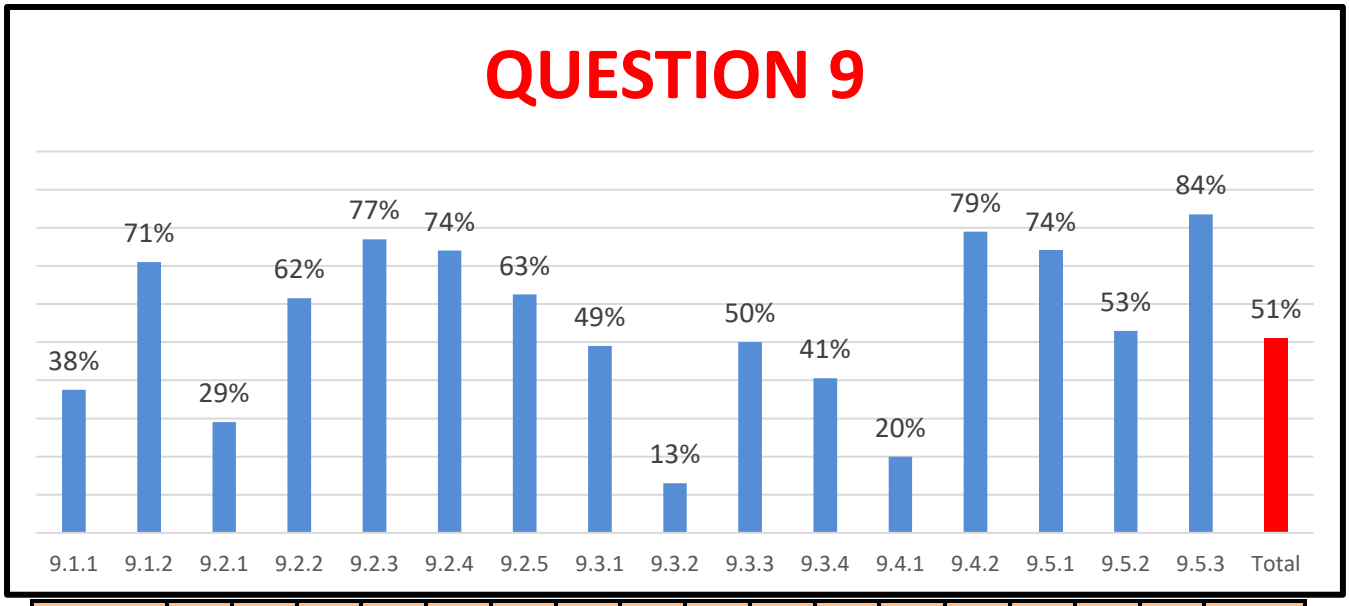
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

Learners do not know how to apply practical work in theoretical context.

QUESTION 9

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100 :	12.75/25	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
9.1 - 9.5	INTEGRATED SCENARIOS	51%



Question number	9.1.1	9.1.2	9.2.1	9.2.2	9.2.3	9.2.4	9.2.5	9.3.1	9.3.2	9.3.3	9.3.4	9.4.1	9.4.2	9.5.1	9.5.2	9.5.3	Total
Question Value	2	1	2	2	2	1	2	1	1	1	2	2	2	1	1	2	25
Maximum	2	1	2	2	2	2	2	2	1	1	2	2	2	1	1	2	22
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	38 %	71 %	29 %	62 %	77 %	74 %	63 %	49 %	13 %	50 %	41 %	20 %	79 %	74 %	53 %	84 %	51%
Median	1	1	0	2	2	1	1	0	0	1	1	0	2	1	1	2	15

Distribution of marks	9.1.1	9.1.2	9.2.1	9.2.2	9.2.3	9.2.4	9.2.5	9.3.1	9.3.2	9.3.3	9.3.4	9.4.1	9.4.2	9.5.1	9.5.2	9.5.3
	2	1	2	2	2	1	2	1	1	1	2	2	2	1	1	2
0	50	29	53	27	13	30	21	52	86	50	36	68	17	26	47	9
1	25	71	36	23	20	66	33	47	13	50	47	24	8	74	53	15
2	25	0	11	50	67	4	46	1	0	0	17	8	75	0	0	76

Once again the performances of learners in this question range from average to very poor.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Q 9.2.1

Learners did not respond well to this question because they focussed on the second part of the question - “dedicated digital reader” and did not answer what was expected from them. They were supposed to give reasons why a laptop is not suitable as a dedicated digital reader. This is very important for teaching purposes for next year.

Q 9.3.2

Learners did not respond well to this question because this is a practical question and the learners are not exposed to the term “feature”. Learners are exposed to the subtotal as a function and not as a feature.

Q 9.4.1

Learners did not respond well to this question. Learners do not know the advantages of blog.

(c) Provide suggestions for improvement in relation to Teaching and Learning

I refer you to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions.

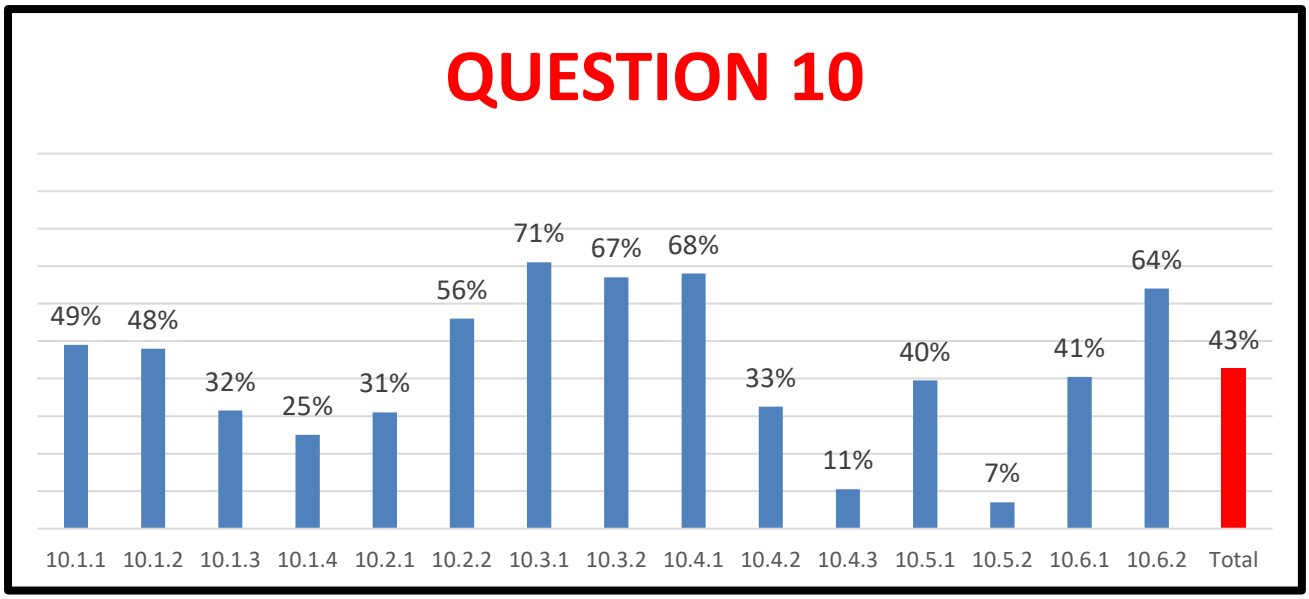
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

These questions were based on application as well as practical. Many learners could not respond correctly to these questions.

QUESTION 10

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Average mark from the sample of 100:	10.75/25	
SUB-QUESTION	**TOPIC OR ASPECT TESTED**	**AVERAGE % FROM SAMPLE**
10.1 – 10.6	INTEGRATED SCENARIOS	43%



Question number	10.1.1	10.1.2	10.1.3	10.1.4	10.2.1	10.2.2	10.3.1	10.3.2	10.4.1	10.4.2	10.4.3	10.5.1	10.5.2	10.6.1	10.6.2	Total
Question Value	**2**	**1**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**2**	**2**	**25**
Maximum	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	20
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	**49 %**	**48 %**	**32 %**	**25 %**	**31 %**	**56 %**	**71 %**	**67 %**	**68 %**	**33 %**	**11 %**	**40 %**	**7 %**	**41 %**	**64 %**	**43 %**
Median	1	0	0	0	1	1	1	2	1	1	0	1	0	1	1	11

Distribution of marks	10.1.1	10.1.2	10.1.3	10.1.4	10.2.1	10.2.2	10.3.1	10.3.2	10.4.1	10.4.2	10.4.3	10.5.1	10.5.2	10.6.1	10.6.2
	2	**1**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**2**	**2**
0	27	52	51	53	48	45	30	18	32	39	84	37	93	37	16
1	48	48	35	44	42	54	69	30	66	57	11	47	7	45	40
2	25	0	14	3	10	1	1	52	1	4	5	16	0	18	44

The learners' response to this question was disappointing, upsetting and not up to standard.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

Q 10.1.3
Learners think you need to have a network in order to have internet access. Learners did not even know the basic disadvantages of using a network – Grade 10 work.

Q 10.1.4
Learners did not respond well to this question because not all of the learners are exposed to public hotspots. This question was a bit out of the framework of the learners.

Q 10.2.1
Learners did not respond well to this question – they could not give reasons for using open source software.

Q 10.4.3
Learners did not respond well to this question because it is part of the new technology. Maybe all the schools did not receive the new additions to the examination guideline.

Q 10.5.2
Learners did not respond well to this question because they did not understand the question. Many learners need to be critical thinkers in order to answer this question.

(c) Provide suggestions for improvement in relation to Teaching and Learning
I refer you to the list of suggestions under the same headings in Question 5. As those are the basic rules for successful teaching and learning in CAT Paper 2 – applicable to all questions.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.
These questions were based on application as well as practical. Many learners could not respond correctly to these questions.

(e) Any other comments useful to teachers, subject advisors, teacher development etc.

Please refer to the general comments at the start of this section for comments, suggestions and general ideas which could help teacher development as well as advantage our learners.

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2022

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

CATNE2

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of:

   SECTION A (25)
   SECTION B (75)
   SECTION C (50)

2. Answer ALL the questions.

3. Number the answers correctly according to the numbering system used in this question paper.

4. Start EACH question on a NEW page.

5. Do NOT write in the right-hand margin of the ANSWER BOOK.

6. Leave a line between EACH subquestion.

7. Generally, one mark is allocated per fact; therefore, a 2-mark question would require TWO facts, etc.

8. Read the questions carefully. DO NOT give more answers than the question requires as it will NOT be marked.

9. All answers MUST be related to Computer Applications Technology.

10. Unless otherwise specified, answers such as 'cheaper', 'slower'/'faster', etc. will NOT be accepted.

11. Do NOT use brand names in your answers, unless specifically required.

12. Write neatly and legibly.

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SECTION A

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1 to 1.10) in the ANSWER BOOK, e.g. 1.11 D.

1.1 The process during which your ISP slows down your internet connection is known as …

A data cap.
B shaping.
C throttling.
D bandwidth. (1)

1.2 Which ONE of the following processes would you use to protect your data?

A Archiving
B Compression
C Error checking
D Firewall (1)

1.3 Plug-and-play technology is used to …

A play games on a gaming console.
B access the content of a CD.
C install an operating system.
D detect and configure new devices. (1)

1.4 A fraudulent process which tries to obtain sensitive information is called …

A pharming.
B spamming.
C phishing.
D hoaxing. (1)

1.5 Which ONE of the following is an example of a question that you should NOT include in a questionnaire in a PAT?

A Why has the price of computers gone up?
B What is your favourite processor brand?
C Which operating system do you use?
D How many years have you been using computers? (1)

1.6 The … is used by the operating system to communicate with hardware devices.

A Device Manager
B Device Driver
C Audio Manager
D Disk Defragmenter (1)

1.7 Which ONE of the following is NOT a task generally performed during the processing phase of the information processing cycle?

A Send to storage
B Search and sort
C Compare and decide
D Perform calculations (1)

1.8 Which ONE of the following database objects is a user-friendly interface for capturing data?

A Table
B Query
C Report
D Form (1)

1.9 Which validation rule for a *DateOfBirth* field will allow ONLY dates of people born in the years 2003 to 2013?

A >=2003 OR >=2013
B >=#01/01/2003# OR <=#31/12/2013#
C >=2003 AND >=2013
D >=#01/01/2003# AND <=#31/12/2013# (1)

1.10 The following TWO spreadsheet functions are used on the same cell range A1:A8:

- =COUNTA(A1:A8) which returns a value of 6
- =COUNT(A1:A8) which returns a value of 3

Which ONE of the following options is TRUE, based on the results above in the cell range A1:A8?

A There is only one empty or blank cell.
B There are three numeric and three text values.
C There are six cells with numeric values.
D There are eight cells that contain any values. (1)

[10]

QUESTION 2: MATCHING ITEMS

Choose a term/concept from COLUMN B that matches the description in COLUMN A. Write only the letter (A–T) next to the question numbers (2.1 to 2.10) in the ANSWER BOOK, e.g. 2.11 U.

COLUMN A		COLUMN B	
2.1	Raw numbers or facts that are unorganised	A	VoIP
2.2	A device used on a network to manage and share resources	B	information
2.3	An internet technology that enables people from various countries to communicate in real time	C	BIOS
2.4	This user generally requires a good quality graphics card	D	#NAME?
2.5	Firmware containing instructions for the start-up of a computer	E	data
2.6	An example of HTML code used to open a picture in a new browser window	F	ISP
2.7	A technology that uses a person's unique physical characteristics to control access	G	gamer
2.8	A reason why certain documents display unreadable content when you open it on your computer, even though you have an appropriate application	H	password
2.9	An arrangement for employees to work from home using ICTs	I	operating system
2.10	A spreadsheet error message that will appear if you enter the following function: =AVG(B1:B20)	J	ROM
		K	telecommuting
		L	<img src="bird.jpg">
		M	biometrics
		N	data capturer
		O	server
		P	<a href="bird.jpg">
		Q	SOHO
		R	hub
		S	software version
		T	#VALUE!

(10 x 1) **[10]**

QUESTION 3: TRUE/FALSE ITEMS

Indicate whether the following statements are TRUE or FALSE. Write 'true' or 'false' next to the question numbers (3.1 to 3.5) in the ANSWER BOOK. If the statement is true, write 'TRUE'. If the statement is false, write 'FALSE' and change the underlined word(s) to make the statement TRUE. (Do NOT simply use the word 'NOT' to change the statement.)

NO mark will be awarded if FALSE is written without a correct answer.

EXAMPLES:

QUESTION	ANSWER
A keyboard is an input device.	True
Social engineering is the study of the design of equipment for the comfort and the safety of people in a work environment.	False, Ergonomics

3.1 An ATM is an example of a dedicated device. (1)

3.2 Green computing refers to old computing devices that people throw away and that end up in landfill sites. (1)

3.3 A monitor converts electronic data into a hard copy. (1)

3.4 The function of a router is to transmit data between computer networks. (1)

3.5 <br\> is used in HTML to create a horizontal line. (1)
[5]

TOTAL SECTION A: 25

SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1 Explain what an *office suite* is. (2)

4.2 You should consider the resolution when buying input devices such as scanners or cameras.

4.2.1 What unit of measurement is used to describe resolution? (1)

4.2.2 Give ONE disadvantage of capturing an image with poor resolution. (1)

4.3 Software bugs are unintended errors in software.

4.3.1 Explain ONE method software developers use to avoid software bugs in their software, before distributing the final version of the software. (1)

4.3.2 Recommend ONE way in which a user can get rid of a software bug, other than keeping software updated. (1)

4.4 Name the utility program that you can use to close an unresponsive application. (1)

4.5 Give TWO examples of metadata that you can use as criteria when you search for a file, other than using the file name. (2)

4.6 You use a USB cable to connect a smartphone to your computer. Although the cable is connected properly, the devices do not communicate with each other.

Suggest TWO ways to solve this problem. (2)

4.7 Explain TWO ways to check the actual size of a hard drive on a Windows PC, using the graphical user interface. (2)

4.8 Disabled people may need special hardware devices to enable them to use ICTs.

4.8.1 Name ONE input device <u>specifically designed</u> for disabled users. (1)

4.8.2 Name ONE output device <u>specifically designed</u> for disabled users. (1)

4.9 You downloaded a video licensed under the Creative Commons (CC) agreement.

Explain what a *Creative Commons (CC) licence* generally is. (2)

4.10 The owner of a restaurant saw the advertisement below for a point of sale (POS) device.

15" ALL-IN-1 TOUCH PC FOR POINT OF SALE

15" All-in-1 Touch Screen Computer CPU (2.0 GHz) Quad Core Processor 4 GB RAM 64 GB SSD 6 x USB LAN Port 1 x VGA Win10 Pro 64 bit

4.10.1 Why would it be advisable for a restaurant owner to buy an All-in-1 POS device? (1)

4.10.2 Why would the 64 GB SSD have a suitable capacity for a restaurant POS device? (1)

4.10.3 Give TWO disadvantages of using touch screens. (2)

4.11 Give TWO reasons why you would zip/compress a file. (2)

4.12 You wish to store files, but do not have enough storage space on your device.

4.12.1 Which optical media would you recommend to store some files? (1)

4.12.2 Discuss ONE disadvantage of using a flash drive to store some files. (1)
[25]

QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1 What type of network can a company use to connect their offices across the country? (1)

5.2 Give TWO reasons why a teacher would require learners to log in on the computer centre's network. (2)

5.3 Explain TWO reasons why you could get a 'Page not found' error when you try to open a bookmarked website. (2)

5.4 Suggest TWO criteria you should consider when choosing an ISP. (2)

5.5 Recommend TWO netiquette rules for a WhatsApp study group chat. (2)

5.6 Explain EACH of the following concepts: (2)

5.6.1 Search engine

5.6.2 Web browser

5.7 Give a reason why users experience buffering when streaming videos. (1)

5.8 Give TWO uses of IoT in a home environment. (2)

5.9 Name the system that a research company can use to address the need for more computer processing power, without having to buy new hardware. (1)
[15]

QUESTION 6: INFORMATION MANAGEMENT

6.1 Discuss TWO reasons why the following focus question is poorly formulated:

> *How has cybersecurity affected your life and how did you resolve it?*

(2)

6.2 Explain TWO disadvantages of using closed questions in a questionnaire. (2)

6.3 Define EACH of the following word processing features without referring to their position in a document:

- Citation
- Bibliography (2)

6.4 Explain TWO advantages of using electronic data rather than using data in a hard copy format. (2)

6.5 Give TWO database options/features in a query that you can use to analyse data. (2)

[10]

QUESTION 7: SOCIAL IMPLICATIONS

7.1 What is the difference between a *bot* and a *zombie*? (2)

7.2 Explain why users may not realise when they are victims of a spoofing attack. (1)

7.3 Give TWO reasons why DDoS attacks are harmful. (2)

7.4 Discuss the risk of posting videos that you made on social media platforms (such as TikTok or Instagram). (1)

7.5 Give TWO ways to reduce the risk of your computer getting infected by a virus, other than installing an antivirus program or keeping software up to date. (2)

7.6 Give TWO examples of how artificial intelligence (AI) can be useful in a school environment. (2)

[10]

QUESTION 8: SOLUTION DEVELOPMENT

8.1 The screenshot of the spreadsheet below shows the earnings by Sam, a sales representative.

	A	B	C	D	E	F	G
1	**Sam's Sales**						
2						**Commission percentage**	**7.50%**
3	**Stock description**		**Date purchased**	**Date sold**	**Number sold**	**Total**	**Bonus commission**
4	Convection oven		2022/01/10	2022/05/10	4	R3 520.00	#VALUE!
5	Portable game		2022/05/10	2022/07/10	1	R440.00	R33.00
6	Camcorder		2022/11/11	20/11/2022	3	R5 940.00	R445.50
7	LED monitor		2022/12/11	24/11/2022	2	R5 280.00	R396.00
8	Docking station		14/11/2022	16/11/2022	4	R1 760.00	R132.00
9	**Total**				10	##########	#VALUE!

8.1.1 What kind of formatting has been used in row 1, other than font changes? (1)

8.1.2 Which data in the spreadsheet does not have consistent formatting? (1)

8.1.3 The formula used to determine the bonus commission in cell G4 is:

=F4*G2.

What does the $ symbol indicate AND what is its purpose? (2)

8.1.4 How can you correct the error displayed in cell F9? (1)

8.1.5 The SUM function used in cell E9 returns an incorrect result.

Give ONE reason why this result is incorrect. (1)

8.2 A company created a database to keep a record of their customers.

The screenshot below shows the fields in their database table.

Field Name	Data Type
CustomerID	Short Text
CustomerSurname	Date/Time
CustomerName	Short Text
ContactNumber	Number
Address	Short Text
CreditIncluded	Yes/No
DateOfPurchase	Number

8.2.1 Identify TWO fields where unsuitable data types were used. (2)

8.2.2 Which field would be more appropriate for a primary key? Motivate your answer. (2)

8.2.3 Why would you recommend an input mask for the *ContactNumber* field? (1)

8.3 The following menu displays in a web browser:

8.3.1 State THREE changes which you could make to the HTML code to improve the design and layout of the menu in the web page. (3)

8.3.2 Give ONE advantage of web pages being based on text files. (1)
[15]

TOTAL SECTION B: 75

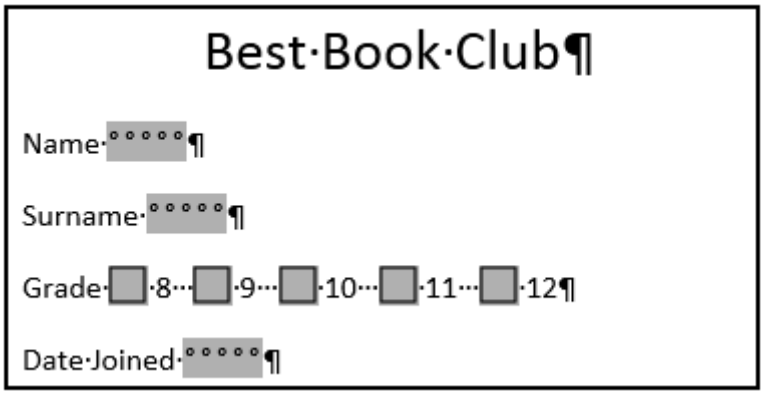
SECTION C

QUESTION 9: INTEGRATED SCENARIO

Your school started a book club to encourage learners to read. The chairperson of the book club requires your ICT knowledge to assist with the planning and administration of the book club.

9.1 The chairperson of the book club keeps a record of the members and the books read by each member.

9.1.1 Recommend TWO changes you can make to the electronic form below to ensure that data capturing is more accurate.



(2)

9.1.2 Which application can you use offline to create an electronic form? (1)

9.2 The Ubuntu project distributes free books in PDF and other digital formats.

One of the aims of the school book club is to encourage learners to read these books on their computing devices.

9.2.1 Give TWO reasons why a laptop is NOT a suitable device to use only for reading books in digital format. (2)

9.2.2 Which TWO software settings on a device can be used to make books in PDF format accessible to visually impaired users? (2)

9.2.3 Suggest TWO ways to extend the battery life of a device used for reading. (2)

9.2.4 Name the concept used when learners use their own devices, instead of the school's devices, to download these PDF books. (1)

9.2.5 Name TWO technologies that learners can use to share these PDF books in electronic format without using the internet or the school's network. (2)

9.3 The club created a spreadsheet to capture lesser known words that learners came across during their reading.

	A	B	C	D
1	**Vocabulary list**			
2	**No.**	**Name of book**	**Word**	**Characters per word**
90	163	Gone with the Wind	Twilight	8
91	164	Gone with the Wind	Chronograph	11
92	165	Gone with the Wind	Cyclone	7
93	166	Narnia	Enchanted	9
94	167	Narnia	Hallucinate	11
95	168	The Time Machine	Sabre	5

9.3.1 Which word processing feature can be used on a particular word to display more words with the same meaning? (1)

9.3.2 The chairperson would like to know how many words appear for each specific book.

Suggest ONE spreadsheet feature that can be used to display this information. (1)

9.3.3 Some of these words will be used to create a crossword puzzle.

Name the function that was used in cells D90:D95 to determine the number of characters in each word. (1)

9.3.4 Give TWO ways to determine if words appear more than once in the spreadsheet. (2)

9.4 Learners are encouraged to maintain a blog where they can write reviews on the books they have read.

9.4.1 Give TWO advantages of using a blog rather than a website to share a book review. (2)

9.4.2 Learners are required to reference the book they are reviewing in their blog.

Other than the title, give TWO fields that should be included in the source to reference the book. (2)

9.5 The chairperson of the book club keeps track of the frequency of the attendance and the number of books read by each member.

9.5.1 Suggest the most suitable application to store the details of the members' attendance and reading progress. (1)

9.5.2 A certificate will be issued for each member who attends more than 80% of the meetings.

Name the word processing feature that can be used to generate multiple certificates using one data source. (1)

9.5.3 Give TWO possible reasons why the printer stopped working halfway through printing the certificates. (2)
[25]

QUESTION 10: INTEGRATED SCENARIO

Your neighbour, Mrs Khumalo, owns a day-care centre for children aged between 4 and 10 years old. You started working there in the afternoons. As part of your job, you are required to assist with some ICT issues.

10.1 Mrs Khumalo has five computers in the administration area.

10.1.1 Give TWO reasons why you would recommend a wireless network for this day-care centre. (2)

10.1.2 What hardware does the day-care centre need to be able to connect a desktop computer to an existing wireless network? (1)

10.1.3 Give TWO disadvantages of using a network. (2)

10.1.4 Give TWO reasons why you would advise Mrs Khumalo NOT to set up a public hotspot at the day-care centre. (2)

10.2 Some parents donated old computers which the day-care centre can use to teach the children computer literacy and to access online educational software.

10.2.1 Suggest TWO reasons why you would recommend that the day-care centre uses open-source software (OSS) to teach computer literacy. (2)

10.2.2 Which measure can teachers take to prevent children from being exposed to sensitive content on the internet? (1)

10.3 You advise Mrs Khumalo to make regular backups either locally or in the cloud.

10.3.1 Give ONE reason why it is important to make regular backups. (1)

10.3.2 Explain TWO benefits of using cloud-based storage instead of using the device on which you are working to backup data. (2)

10.4 Mrs Khumalo received the following message on her computer:

10.4.1 Name the type of malware found in the example above. (1)

10.4.2 Give TWO reasons why the person who sent this message prefers payment in cryptocurrency. (2)

10.4.3 Cryptocurrencies use blockchain technology.

Explain what *blockchain technology* is. (2)

10.5 You advised Mrs Khumalo to include a QR code on her business card.

10.5.1 Give TWO reasons why QR codes can be used to promote her business. (2)

10.5.2 How can she ensure that the QR code will always automatically appear in the newly created word processing documents? (1)

10.6 A parent donated a 3D printer to the day-care centre.

10.6.1 State TWO ways in which Mrs Khumalo can use the 3D printer at the day-care centre to promote the education of young children. (2)

10.6.2 Discuss TWO reasons why Mrs Khumalo should NOT use the 3D printer in the presence of children. (2)
[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P2

NOVEMBER 2022

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 21 pages.

Approved
Internal Moderators
2022-11-20

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Approved
External Moderator
Umalusi
2022/11/20

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SUGGESTIONS AND RECOMMENDATIONS TO MARKERS

- Revisit the questions and the marking guidelines frequently during the marking session.
- It is advisable to read the question frequently (and re-read) together with the candidate's response to check that it correlates, so that you are not misled by the candidate's statements/answers.
- Be careful not to focus on keywords or general statements, but rather read the entire answer. If in doubt, read the entire answer and then the question paper and the marking guidelines.
  - Ask yourself or your senior marker if the response could 'fit' into the marking guidelines before allocating the correct marks to the candidate.
  - Accept correct answers that are expressed differently, e.g. the marking guidelines states 'slow' and the learner responds with 'not fast'.
- Beware of overlapping answers to a specific question. In general, ONE mark is awarded per fact.
- Do not choose answers on the candidate's behalf. Where a question requires a candidate to LIST or NAME mark the first number of answers/facts required, e.g. the first TWO facts if the candidate presents a list of FIVE facts when only TWO facts were required, even if presented in paragraph format.
- Questions requiring longer answers must be regarded as a single unit. Marks can be awarded if correct statements are found anywhere in the paragraph.

SECTION A

QUESTION 1: MULTIPLE-CHOICE

1.1	C	✓	1
1.2	A	✓	1
1.3	D	✓	1
1.4	C	✓	1
1.5	A	✓	1
1.6	B	✓	1
1.7	A	✓	1
1.8	D	✓	1
1.9	D	✓	1
1.10	B	✓	1
		Total:	**[10]**

QUESTION 2: MATCHING ITEMS

2.1	E	✓	1
2.2	O	✓	1
2.3	A	✓	1
2.4	G	✓	1
2.5	C	✓	1
2.6	P	✓	1
2.7	M	✓	1
2.8	S	✓	1
2.9	K	✓	1
2.10	D	✓	1
		Total:	**[10]**

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QUESTION 3: TRUE/FALSE ITEMS

(Note to marker: In Question 3.2, 3.3, and 3.5: • *Candidates need to provide the correct term, e.g. motherboard, in order to get the mark* • *Award the mark if the correct answer is given without the word FALSE* • *Do NOT award the mark if only the word FALSE is given without a correct answer)*		
3.1	True ✓	1
3.2	False, E-waste ✓ /Electronic waste	1
3.3	False, Printer ✓	1
3.4	True ✓	1
3.5	False, <hr> ✓ *(Ignore the forward or backslash)*	1
		[5]

TOTAL SECTION A: 25

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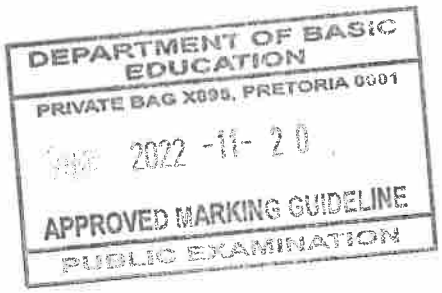
SECTION B

QUESTION 4: SYSTEMS TECHNOLOGIES

4.1	***Explanation of an office suite*** An office suite is a collection of programs ✓ (software applications) that link/integrate ✓ with each other/with a similar user interface		2
4.2.1	***Measurement for resolution*** 1) DPI/dots per inch 2) Pixel/Megapixel/MP ✓ (Any one)	1	
4.2.2	***Disadvantage of capturing an image with poor resolution*** 1) Poor resolution causes poor image quality 2) OCR does not work on poor quality images 3) Cannot enlarge image ✓ (Any one)	1	2
4.3.1	***ONE method software developers use to avoid having bugs in their software*** 1) Internal testing by a dedicated team/Alpha testing 2) Distribute Beta/Test versions: Public test and report errors which are then corrected by the developer 3) Error reporting: Developers use error reporting facilities when a program crashes ✓ (Any one)	1	
4.3.2	***ONE way a user can get rid of a software bug, other than keeping software updated*** 1) Install a patch 2) Install a service pack ✓ (Any one)	1	2
4.4	***Utility used to close a non-responsive application*** Task Manager ✓		1



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4.5	***TWO metadata criteria to search for a file, other than the file name*** 1) Last modified 2) Date modified 3) File extension/File type 4) File size 5) Date created 6) Date printed 7) Author 8) Subject 9) GPS information 10) Time, etc. ✓✓ (Any two)		2
4.6	***TWO solutions when a smartphone, connected properly via a USB cable, does not communicate with the computer*** 1) Restart the smartphone and restart the computer 2) Use manufacturer's cable/Use another USB cable/port 3) Install/Update the driver/firmware on the computer 4) Enable the relevant settings on the smartphone/Connect the smartphone to the computer as File Transfer 5) Turn on USB debugging on your smartphone 6) Adjust security settings of the computer to allow the smartphone to connect ✓✓ (Any two) *(Note to marker: Do NOT accept disconnecting and reconnecting the cable)*		2
4.7	***TWO ways to check the hard drive size*** 1) This PC (in File Explorer) 2) System information / Device specification / (Windows) Properties 3) Disk management 4) Task Manager ✓✓ (Any two)		2

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4.8.1	***ONE input device <u>specifically designed</u> for disabled users*** 1) Sip and Puff 2) Braille keyboard/Large key keyboard 3) Oversized buttons on devices 4) Head operated pointer 5) Foot operated mouse 6) Eye movement tracking device 7) Generous trackball e.g. AbleNet Wave ✓ (Any one)	1	
4.8.2	***ONE output device <u>specifically designed</u> for disabled users*** 1) Braille printer 2) Vibrating pads (that does not emit sounds) 3) LED indicator lights 4) Braille screen/display with feedback that can be felt ✓ (Any one)	1	2
4.9	***Explanation of Creative Commons licence*** Creative Commons is a <u>copyright agreement</u> ✓ that allows anyone to <u>use and share</u> ✓ the content <u>under certain conditions</u> (e.g. free) from the copyright holder/owner		2
4.10.1	***Advantage of an All-in-1 device*** 1) Less physical space/Mobility 2) No cables connecting various components such as monitor 3) Easy to install/No additional devices necessary 4) The intuitive design leads to higher productivity/more efficient ✓ (Any one)	1	
4.10.2	***Reason for the 64 GB SSD being suitable for a restaurant POS*** 1) Data is stored centrally on a server and generally not on POS system 2) Dedicated device/Only uses one program 3) Generate small files that may be stored in temporary storage ✓ (Any one)	1	
4.10.3	***TWO disadvantages of using touch screens*** 1) Input can be inaccurate when wearing gloves/user has wet fingers/screen becomes dirty ✓ 2) Cumbersome to input large amounts of data/to make corrections ✓	2	4

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4.11	***TWO reasons for zipping/compressing a file*** 1) Possible decrease in storage space for a file/Reduce file size 2) Uses less data when sending files 3) Add a layer of security to files with password 4) Send a folder or group of files as single/smaller e-mail attachment 5) Faster to transfer large, zipped files to removable media ✓✓ (Any two)		2
4.12.1	***Optical media for storage*** CD, DVD or Blu-ray ✓	1	
4.12.2	***Disadvantage of flash drive to store files*** 1) Easy to lose 2) Easily stolen 3) Size to cost ratio is high/expensive per GB 4) Limited read or write cycles ✓ (Any one)	1	2
			[25]

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QUESTION 5: INTERNET AND NETWORK TECHNOLOGIES

5.1	***Type of network to connect company offices across the country*** WAN ✓ /GAN/VPN		1
5.2.	***TWO reasons why learners are required to login on a network*** 1) Necessary for secure profiles/Gain access to folder associated with each profile 2) User profiles distinguish users on a network/The access rights for each user 3) Necessary for a classroom management system 4) Necessary to access services provided by the network server, e.g. file sharing, hardware sharing, internet ✓✓ (Any two)		2
5.3	***TWO reasons why the 'Page not found' error occurs when opening a bookmarked website*** 1) Website is down due to maintenance 2) Page was removed/Bookmarked page does not exist anymore 3) (Host) server is offline ✓✓ (Any two)		2
5.4	***TWO criteria to consider when you choose an ISP*** 1) Coverage of the ISP's services 2) Types of services/security offered by the ISP 3) Download and upload speeds offered 4) Support offered by the ISP 5) Reviews from other customers, e.g. reliability 6) Pricing/Terms of the various packages/contracts available ✓✓ (Any two)		2
5.5	***TWO netiquette rules for a WhatsApp study group chat*** 1) Be kind and courteous 2) Do not send large attachments 3) Do not type in capital letters 4) Do not use vulgar language/Use more formal language 5) Keep chats related to the purpose of the group/Do not send spam messages ✓✓ (Any two)		2

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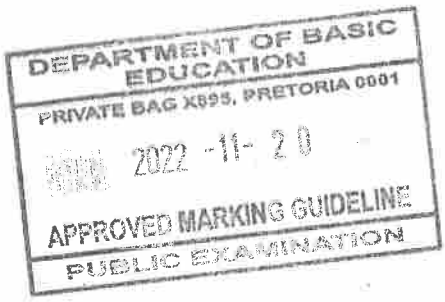
5.6.1	***Concept of a search engine*** Software/Application that finds/searches for web pages by using key words/phrases ✓	1	
5.6.2	***Concept of a web browser*** A program that gives access to the www ✓ /Software that allows the user to explore and to view web pages	1	2
5.7	***Reason for buffering when streaming videos*** 1) Insufficient bandwidth/Slow internet connection 2) Streaming in high resolution ✓ (Any one)		1
5.8	***TWO uses of IoT in a home environment*** 1) Devices can be monitored via the internet 2) Devices can be controlled via the internet 3) A variety of sensors can be used to produce data for decision-making 4) Improves reliability of the automated devices 5) Creates opportunities for the integration of various devices ✓✓ (Any two) *(Note to marker:* • *Accept specific examples of <u>IoT device usage or devices with a motivation</u>, e.g. a fire alarm connected to the fire department* • *Accept two substantiated examples even if both examples are linked to the same bullet number)*		2
5.9	***System to address the need for more processing power*** Grid computing ✓		1
			[15]



QUESTION 6: INFORMATION MANAGEMENT

6.1	***TWO problems with the focus question*** There is more than one question ✓ Can be answered without research ✓ /The question is not broad enough		2
6.2	***TWO disadvantages of closed questions in a questionnaire*** 1) Forces the respondent to answer in a certain way/Limited choices 2) No way of knowing if the question was properly understood 3) Survey result could be biased 4) Could result in information that is not meaningful/Focus could be too narrow ✓✓ (Any two)		2
6.3	***Definitions: Citation and Bibliography*** **Citation** A single reference to a specific source ✓ (in the bibliography) **Bibliography** A detailed list of all sources used in a document ✓ *(Note to marker: Do NOT accept reference to position in the document)*		2
6.4	***TWO advantages of electronic data over data in hard copy format*** 1) Easier to obtain data via e-mail, SMS, portable storage media 2) No need to retype or scan data 3) Often more likely to be up to date 4) Easier to share data 5) Easier to correlate/analyse/find data 6) Less physical space needed for storage of data 7) High speed transfer of data 8) Easier to make backups 9) Easier to edit/Improve readability ✓✓ (Any two)		2
6.5	***TWO database query options/features that are used to analyse data*** 1) Criteria/Functions in criteria 2) Total(s)/Group by *(NOT Grouping/Group)* 3) Sort 4) Show (only relevant fields) 5) Calculated fields/Filter 6) Filter ✓✓ (Any two)		2
			[10]

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QUESTION 7: SOCIAL IMPLICATIONS

7.1	***Difference between a bot and a zombie*** A bot is software/application used to automate certain tasks and actions ✓ A zombie is an infected computer that has been taken over/is remotely controlled ✓ (by a hacker)		2
7.2	***Reason why it is difficult to detect a spoofing attack*** The e-mail address appears to be valid ✓		1
7.3	***TWO reasons why DDoS attacks are harmful*** 1) Legitimate users are not able to use the website/service/internet 2) Website/Company can lose income 3) Reputational damage done to the company ✓✓ (Any two)		2
7.4	***Risk of posting videos you created on social media*** 1) Others can use and share your content as if it belongs to them/identify theft 2) You may become a victim of stalking/phishing/cyberbullying 3) Agreement may state that you have transferred the ownership of your content to that platform 4) Consequences such as legal liability/harming minors and others 5) Disadvantaging yourself on a social/professional level ✓ (Any one)		1
7.5	***TWO ways to reduce the risk of your computer getting infected by a virus, other than installing an anti-virus or keeping software up to date*** 1) Do not click on links/attachments in suspicious e-mails or websites 2) Do not use pirated/cracked software 3) Only download files from safe sources 4) Use a browser known for good security e.g. Firefox/Pop-up blocker 5) Minimise use of untrustworthy/external media to transfer data 6) Scan external media before data transfer ✓✓ (Any two)		2

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7.6	***TWO examples how AI can be useful in a school environment*** 1) Educational apps to personalise learning experience 2) Digital classroom assistant can help with internet research 3) Facial recognition on CCTV can assist with better management of the school disciplinary system 4) Automated management of attendance using data gathered from CCTV and fingerprint scanners 5) Analysis of trends based on data gathered by sensors such as facial recognition and fingerprint scanners, regarding attendance of school functions, academic performance, etc. ✓✓ (Any two) *(Note to marker: Accept realistic examples of robots, autonomous cars, etc., with reference to the school environment even if both examples are linked to the same bullet number)*		2
			[10]

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QUESTION 8: SOLUTION DEVELOPMENT

8.1.1	***Formatting used in row 1, other than font changes*** Merge and centre ✓ /Merge	1	
8.1.2	***Data that does not have consistent formatting*** Date purchased/Date sold ✓ or specific examples such as C4:D8/Dates	1	
8.1.3	***Cell reference using $ symbol AND its purpose*** ***$ symbol:*** Absolute cell referencing ✓ ***Purpose:*** The cell reference remains the same/constant when the formula is copied down/pasted ✓	2	
8.1.4	***Correct the ##### error*** 1) Make column wider 2) Decrease font size ✓ (Any one)	1	
8.1.5	***ONE reason why the SUM function returns an incorrect result*** 1) The cell range in the function is incorrect 2) Some values in the column are formatted as text ✓ (Any one)	1	6
8.2.1	***TWO fields with unsuitable data types*** 1) CustomerSurname 2) ContactNumber 3) DateOfPurchase ✓✓ (Any two)	2	
8.2.2	***Field more appropriate for primary key AND motivation*** ***Appropriate field:*** CustomerID ✓ ***Motivation:*** Contents will be unique ✓	2	
8.2.3	***ONE reason for input mask on the ContactNumber field*** 1) Input mask forces a standard/consistent format for data entry 2) The correct data format will be used for accurate input ✓ (Any one)	1	5

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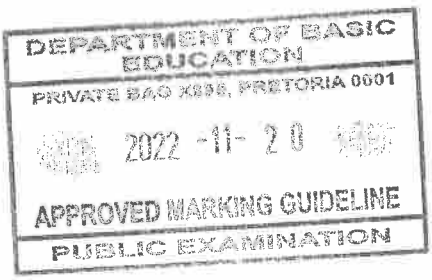
8.3.1	***THREE changes to the HTML code to improve the design and layout*** 1) Heading sizes/Bold font 2) Ordered list/Unordered list 3) Font type/size/style and font colour 4) Background colour 5) Images/Icons 6) Centre tags 7) Table tags 8) Links to descriptions/images, etc. ✓✓✓ (Any three) *(Note to marker: Accept any three examples/HTML tags even if all three examples refer to the same bullet number)*	3	
8.3.2	***ONE advantage of web pages being based on text files*** 1) Various browsers can be used to open the web pages 2) The web pages can be edited with various text editors, word processing programs, etc. 3) Text-only files are small files which load faster ✓ (Any one)	1	4
			[15]

TOTAL SECTION B: [75]



SECTION C

QUESTION 9: INTEGRATED SCENARIO

9.1.1	***TWO changes to ensure accurate input*** 1) Use a combo box/drop-down list for the Grade choices 2) Use a date picker for the selection of the Date Joined 3) Help text 4) Validation rule to exclude future dates ✓✓ (Any two)	2	
9.1.2	***Application to create an electronic form offline*** 1) Word processor, e.g. (Microsoft) Word/Open Office/WordPerfect 2) Database, e.g. (Microsoft) Access 3) Spreadsheet, e.g. (Microsoft) Excel ✓ (Any one)	1	3
9.2.1	***TWO reasons why a laptop is NOT suitable as a dedicated digital reader*** 1) Physical size: Heavy/Too big to carry around 2) Physical keyboard can be an obstacle/irritation 3) Unnecessary amount of processing power and RAM/Under-utilised 4) Much reduced battery life when compared to a dedicated e-book reader 5) Risk of damage ✓✓ (Any two)	2	
9.2.2	***TWO software settings for visually impaired*** 1) Activate the Text-to-Speech/Narrator software 2) Use the magnifying utility 3) Increase font size 4) Use high contrast colours 5) Brightness/Set lighting options ✓✓ (Any two)	2	
9.2.3	***TWO ways to extend the battery life of a device*** 1) Reduce the screen brightness 2) Enable battery saving settings 3) Enable flight/airplane mode 4) Close background apps 5) Disable unused sensors such as an accelerometer ✓✓ (Any two)	2	

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9.2.4	***Concept of learners using their own, not school devices, to download books*** BYOD ✓ /Bring Your Own Device	1	
9.2.5	***TWO technologies used to share files without internet or network*** 1) Bluetooth 2) NFC 3) Wi-Fi direct *(Accept examples: SHAREit, Airdrop)* 4) OTG (On The Go)/Flash drive/Removable media/USB cable ✓✓ (Any two)	2	9
9.3.1	***Word processing feature to show words with the same meaning*** Synonyms ✓ /Thesaurus	1	
9.3.2	***Spreadsheet feature used display number of words for each book*** SUBTOTAL ✓ *(Note to marker: Accept Pivot Table feature)*	1	
9.3.3	***Function used to determine number of characters in each word*** LEN ✓	1	
9.3.4	***TWO ways to determine if words appear more than once in a spreadsheet*** 1) Conditional formatting 2) Find feature 3) Sort the data ✓✓ (Any two)	2	5
9.4.1	***TWO advantages of a blog over a website*** 1) Blogs are more suitable for personal opinions ✓ 2) Allows others to comment or give an opinion ✓	2	
9.4.2	***TWO fields to reference a book, other than the title*** 1) Author 2) Year/Date published 3) Publisher 4) City/Where published 5) Edition 6) Page 7) Volume 8) Access dates ✓✓ (Any two)	2	4

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9.5.1	***Application most suitable to store frequency of attendance and reading progress*** Database ✓ /Access *(Accept Spreadsheet/Excel)*	1	
9.5.2	***Word processing feature used to generate multiple certificates*** Mail Merge ✓ /Mailings	1	
9.5.3	***TWO reasons for a printer to stop printing*** 1) No paper 2) No ink/toner 3) Paper jam 4) Physical malfunction 5) Printer has no power/Disconnected, etc. ✓✓ (Any two)	2	4
			[25]

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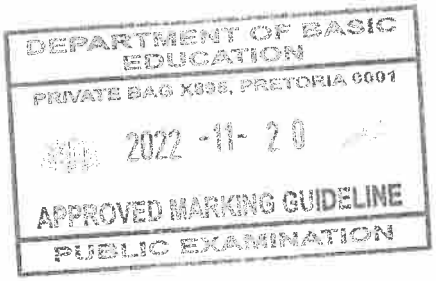
QUESTION 10: INTEGRATED SCENARIO

10.1.1	***TWO reasons for recommending a wireless network in the administration area*** 1) Ease of mobility 2) Lower installation cost 3) Easy to use and install 4) Easier to cover a large area 5) No cable clutter ✓✓ (Any two) *(Note to marker: Accept reasons for creating a network)*	2	
10.1.2	***Hardware required for desktop PC to connect to a wireless network*** 1) Wireless NIC/Wi-Fi adapter/Wireless dongle 2) USB dongle/Router 3) PCI card ✓ (Any one)	1	
10.1.3	***TWO disadvantages of using a network*** 1) Viruses 2) Security/Hacking 3) Additional hardware cost 4) Specialised installation ✓✓ (Any two)	2	
10.1.4	***TWO reasons why a public hotspot should not be set up at a day-care centre*** 1) Network security issues e.g. other devices such as printers etc., can be accessed 2) Physical security of learners/boundary may be compromised due to loiterers wanting to access the Wi-Fi 3) Additional data costs due to many outsiders accessing the internet 4) Only office computers require access to the network ✓✓ (Any two)	2	7



10.2.1	***TWO reasons to recommend open source software for teaching computer literacy*** 1) Free to use 2) Variety of applications are available 3) Can be customised for school requirements ✓✓ (Any two)	2	
10.2.2	***Measure to prevent children being exposed to sensitive content on the internet*** 1) Parental guidance software, e.g. Net Nanny, Qustodio, Bark, etc. 2) Parental settings/Set up child profiles/Content filtering 3) Firewall, etc. ✓ (Any one)	1	3
10.3.1	***ONE reason for regular backups*** Prevent loss of data ✓	1	
10.3.2	***TWO benefits of using cloud-based storage rather than offline storage on the same device for data backup*** 1) Cloud storage is scalable when you need more storage space 2) Cloud storage reduces the need for space on local storage 3) Cloud storage cannot be lost/damaged like the local storage media/less chance of losing data 4) Can automatically synchronise files/Can access data from any device 5) Collaboration and sharing of files ✓✓ (Any two)	2	3

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10.4.1	***Name of malware in the given example*** Ransomware ✓	1	
10.4.2	***TWO reasons why cryptocurrency is preferred by hackers*** 1) Cannot trace who the owner of the account is 2) Secure method of payment 3) Payment can be made to anywhere in the world/Does not need to be converted to other currencies ✓✓ (Any two)	2	
10.4.3	***Definition of blockchain technology*** Blockchain technology is a sequence of blocks or groups of transactions ✓ that are chained together and distributed among the users ✓ /constantly updated/verified **OR** • The blockchain is an incorruptible public digital ledger • of economic transactions (that can be programmed to record not just financial transactions, but virtually everything of value)	2	5
10.5.1	***TWO reasons for using a QR code to promote a business*** 1) A QR code links directly to a website/live stream 2) No spelling errors made in the input of the URL 3) Can contain other information, e.g. contact details, etc. ✓✓ (Any two)	2	
10.5.2	***Way to ensure that QR code will automatically appear in a newly created word processing document*** Use a template ✓	1	3

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10.6.1	***TWO ways a 3D printer can be used for education purposes*** 1) Print educational models 2) Print building blocks for children 3) Print educational toys, e.g. for counting 4) Print missing parts of toys 5) Print tracing templates, etc. ✓✓ (Any two)	2	
10.6.2	***TWO reasons why a 3D printer should not be used in the presence of (young) children*** 1) Gives off strong smells/toxic/harmful fumes 2) Loose pieces could be choking hazards 3) Young children may want to push buttons – may cause the printer to malfunction 4) Children may get hurt if they bump or touch the printer 5) Very hot surfaces on the printer are dangerous ✓✓ (Any two)	2	4
			[25]

TOTAL SECTION C: 50

GRAND TOTAL: 150

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